Remarks

Claims 34-61 were pending in this application. Claims 35, 38, and 41-42 are withdrawn from present consideration as required by the Examiner in paragraph 1 of the Final Office Action. Claims 54 and 55 are amended herein to correct their dependency. Accordingly, claims 34-61 are pending in this application with claims 35, 38, and 41-42 withdrawn from present consideration. Claims 34 and 56 are independent.

Applicants acknowledge that, as indicated in paragraph 9 of the Final Office Action, the rejections presented in prior Office Actions have been rendered moot in view of the new grounds for rejection presented in the Final Office Action.

Applicants respectfully request entry of the amendments and remarks made herein into the file history of the present invention. Reconsideration and withdrawal of the rejections set forth in the above-identified Final Office Action are respectfully requested.

I. Rejections Under 35 U.S.C. § 112, First Paragraph, Objection to the Drawings and Specification

At paragraphs 2-4 of the Final Office Action, claims 34, 36, 37, 39, 40, 43-52, and 56-61 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to practice the invention, and the specification and drawings were objected to, for the reasons of record. In sum, the Final Office Action alleges that the drawings and specification fail to describe a "projection screen" (claim 41), the "common focusing optical elements for their focusing" (claim 48), "components that are mechanically attached to each other in the focal plane of the common optical system" (claim 49) and the "means of the same optical components" (claim 61) are missing, unclear, and confusing. Further, descriptions for reference

numbers 22 and 23 in Fig. 10 are allegedly missing. Correction of the specification and drawings was required. Applicants traverse respectfully.

With regard to the "projection screen" (claim 41), Applicants submit respectfully that claim 41 is presently withdrawn from consideration, and Applicants respectfully request that the objection and rejection based on the term "projection screen" be held in abeyance pending the prosecution of the claims under consideration. Notwithstanding the foregoing, Applicants submit respectfully that no drawing is necessary for one skilled in the art to understand the subject matter of the claims. Although the Final Office Action cites 37 C.F.R. § 1.83 as requiring that a drawing show every feature of the invention specified in the claims, Applicants direct the Examiner's attention to 37 C.F.R. § 1.81(a), which states that the applicant must provide a drawing *where necessary for the understanding of the subject matter*, thus superceding 37 C.F.R. § 1.83. Applicants submit respectfully that one skilled in the art would understand without the use of a drawing how a reflection device might comprise a projection screen as recited in claim 41; hence, no drawing is necessary, though one may be provided as a convenience to the reader.

In view of the above, Applicants further respectfully direct the Examiner's attention to Fig. 8, which shows an alignment beam being reflected using a collimator. The specification, at page 7, lines 29-31, describes the use of a wavelength converter *as a* projection screen in the collimator. In particular, the specification recites, "[I]t can be particularly appropriate to use a wavelength converter as a projection screen in the collimator in cases in which a collimator is used to return the simulator beam." Applicants submit respectfully that one skilled in the art would understand, without reference to any figures, but drawing upon Fig. 8 as a convenience, that a wavelength converter would be used as a projection screen, for example by coating the

innermost reflecting surface of the collimator with wavelength converting material having projection screen properties such that at least a portion of the normally invisible simulator beam is converted into visible light, which becomes apparent upon the projecting screen, and is returned to the sights of the weapon via the collimator.

With regard to the "common focusing optical elements for their focusing" (claim 48), Applicants submit respectfully that Fig. 4 shows reference number 14, a lens, which is an optical focusing element common to the simulator beam on its axis (5) and the alignment beam on its axis (7). This configuration is discussed in the specification at page 6, lines 7-8, which recites, "[T]his arrangement using a common optical system, represented here in the form of a lens 14." Accordingly, Applicants submit respectfully that a "common focusing optical elements for their focusing" is indeed disclosed in the figures and , therefore, is not missing, is clear, is not confusing, and would not require undue experimentation to be practiced by one skilled in the art.

With regard to the "components that are mechanically attached to each other in the focal plane of the common optical system" (claim 49), Applicants submit respectfully that Fig. 4 shows reference numbers 12 and 13, a laser emitter and reticle, respectively, which are present in the focal plane of the common optical system, which is lens 14, as noted above. This configuration is discussed in the specification at page 6, lines 2-10, which recites that "it is an advantage to place a reticle 13, which generates the alignment beam 6, in the same focal plane as the laser 12 and to connect these, that is the laser and the reticle, with a fixed mechanical connection." The same passage notes further a "stable, mutual anchoring of the laser and reticle." Accordingly, Applicants submit respectfully that a components that are mechanically attached to each other in the focal plane of the common optical system" are indeed disclosed in the figures and , therefore, are not missing, are clear, are not confusing, and would not require

undue experimentation to be practiced by one skilled in the art.

Applicants note that the expression "means of," cited in the objections to and rejection of claim 61 and found previously in claim 33, which was re-presented as present claim 61 in Applicants' previous response filed January 30, 2004, is **not present** in pending claim 61. Claim 61 recites "the alignment beam and the simulator beam are focused by the same optical components." Nevertheless, the arguments in favor of claim 61 over the objections and rejection noted above are the same regardless of the presence or absence of the expression "means of," and follow below.

With regard to the "means of the same optical components" (claim 61), Applicants submit respectfully that Fig. 4 shows reference number 14, a lens, which is an optical component common to the simulator beam and the alignment beam as noted above. This configuration is discussed in the specification at page 6, lines 7-8, which recites, "[T]his arrangement using a common optical system, represented here in the form of a lens 14." Accordingly, Applicants submit respectfully that a "means of the same optical components" is indeed disclosed in the figures and , therefore, is not missing, is clear, is not confusing, and would not require undue experimentation to be practiced by one skilled in the art.

With regard to reference numbers 22 and 23 found in Fig. 10, Applicants respectfully direct the Examiner's attention to claim 6 as filed, which recites, "first reflecting surfaces (22) and second reflecting surface (23)." Accordingly, Applicants submit respectfully that a description of reference numbers 22 and 23 is indeed found within the specification as filed. If the Examiner feels that it would be more proper, Applicants would propose to delete the reference numbers 22 and 23 from Fig. 10.

In view of the above, Applicants submit respectfully that the objections to the

specification and drawings, and the rejection of claims 34, 36, 37, 39, 40, 43-52, and 56-61 under 35 U.S.C. § 112, first paragraph, have been overcome or traversed. Accordingly, Applicants request respectfully that the objections to the specification and drawings, and the rejection of claims 34, 36, 37, 39, 40, 43-52, and 56-61 under 35 U.S.C. § 112, first paragraph, be withdrawn.

II. Rejections Under 35 U.S.C. § 112, Second Paragraph

At part 5 of the Final Office Action, claims 48, 49, 54, 55, 57, 59, and 61 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to point out particularly and claim distinctly the subject matter regarded as the invention for the reasons of record. In particular, claims 48, 49, and 61 are rejected over the same language noted in section I, above. Claim 57 is rejected over the language "a wavelength converter material." Claim 59 is rejected over use of the language "the conduct of an alignment" and a check of an alignment." Claims 54 and 55 are rejected as allegedly claiming structural elements found in previously canceled claims. Applicants traverse respectfully.

With regard to the rejection of claims 48, 49, and 61, Applicants refer the Examiner's attention to section I, above, which provides explanation of the rejected language.

With regard to the rejection of claim 57, Applicants submit respectfully that one skilled in the art will understand the nature of a wavelength converter material. A wavelength converter material is any material that absorbs radiation of one wavelength and emits radiation of a second, chosen, wavelength. In the present case, a useful wavelength converter material is one that emits a visible light signal when exposed to an invisible form of radiation. A simple, common example of one such material is ultraviolet (UV)-responsive ink such as the kind used to mark

one's personal property against loss or theft. The ink is invisible until exposed to UV light when it glows brightly. The ink converts an invisible form of radiation (UV light) into a visible form (visible light). Many other examples of wavelength converter materials are available in the literature from the date of filing of the present invention. One skilled in the art would surely be familiar with these and be able to use them in the practice of the present invention.

With regard to claim 59, the language "the conduct of an alignment" may be clearly understood to mean "the act of conducting an alignment of the simulator beam with the line of the weapon sight." The expression "a check of an alignment" may be clearly understood to mean "checking to ensure that the simulator beam is in alignment with the line of the weapon sight." Applicants submit respectfully that the language of claim 59 is clear and unambiguous.

With regard to the rejection of claims 54 and 55, and without acquiescing in the propriety of rejection, and solely to advance prosecution of the present application, claims 54 and 55 are amended herein to correct their dependency to claim 34 in each case. Applicants submit respectfully that failure to correct the dependencies previously was mere oversights or typographical error, and Applicants submit respectfully that no new matter is added in the present amendments correcting the dependency.

On this basis, Applicants suggest respectfully that the rejections have been traversed or overcome, and Applicants request respectfully that the 35 U.S.C. § 112, second paragraph, rejection of claims 48, 49, 54, 55, 57, 59, and 61 be withdrawn.

III. The Rejections Under 35 U.S.C. § 103(a)

The Final Office Action, at part 7, rejects claims 34, 36, 39, 40, 43, 48-52, 56, 57, and 62 as allegedly being obvious over U.S. Patent No. 4,464,974 to Goda (hereinafter, "Goda"),

in view of U.S. Patent No. 4,917,609 to Eichweber (hereinafter, "Eichweber") under 35 U.S.C. § 103(a); claims 45-47 are rejected as allegedly being obvious over Goda and Eichweber in further view of U.S. Patent No. 5,476,385 to Parikh *et al.* (hereinafter, "Parikh"); claims 53 and 58-60 are rejected as allegedly being obvious over Goda and Eichweber in further view of U.S. Patent No. 4,619,616 to Clarke (hereinafter, "Clarke")(in combination, the "Cited References"); all for the reasons of record. In sum, the Final Office Action alleges that the Cited References teach all of the limitations of the rejected claims, the contents of which are allegedly old and well known. Applicants traverse respectfully.

Without acquiescing in the propriety of any rejection, and solely to advance prosecution of the present application by making the claimed subject matter more clear, Applicants amend independent claim 34 herein to make clear that the alignment device and simulator are both mounted on the weapon. While Applicants believe this is clear in the claims prior to this amendment and in view of the disclosures of the specification, Applicants seek to remove any trace of ambiguity from the claims.

Applicants submit respectfully that the novel firing simulator of the present invention is neither taught nor suggested by Goda, either alone or in combination with Eichweber, Parikh, and/or Clarke. In particular, there is neither teaching nor suggestion in these references of an alignment device comprising a reflection device to reflect an alignment beam into a weapon sight. Thus, Applicants submit respectfully that, as neither Eichweber, Parikh, nor Clarke cure the deficiencies of Goda with respect to the rejected claims of the present invention, the combination of the Cited References fails to meet the threshold required for establishing a *prima facie* case of obviousness under 35 U.S.C. § 103(a).

Applicants submit respectfully that Goda fails to teach the presently-claimed invention in

at least three ways. Goda discloses shooting simulator wherein a reference beam 46 is directionally coupled with a laser beam 38; however, contrary to the presently-claimed invention, Goda teaches that 1) neither the reference nor laser beams are visible through the weapon sight, 2) there is no alignment means for ensuring and checking that the reference and laser beams are actually co-directional, and 3) the reference and laser beams are not capable of being locked into the same direction as the weapon sight. The Goda system, in fact, is simply a scoring system to determine whether or not a weapon sights is trained on a target when a simulated shot is made.

Firstly, as clearly shown in Fig. 1 of Goda, the simulator beams are directed into a goniometer 28 and not into the weapon sights as presently claimed. Only the target is visible through the weapon sight, not an alignment beam that indicates that the simulator is tracking the visual sighting accurately as is presently claimed. In other words, the reference beam fails to provide any direct feedback to the shooter as to whether the simulated shot is directed toward the same location as the weapon's sights.

Secondly, Goda at column 4, lines 59-62, teaches a "reference radiation beam whose axis 46 can be adjusted exactly parallel to the transmitting direction 38 of the laser signals." There is no teaching or suggestion in Goda of how this adjustment is made or later checked for continued accuracy. This inability to assess the discrepancy between the simulated firing beam and the reference beam is precisely one of the shortcomings that the present invention is designed to correct. Further, Goda teaches at column 4, lines 26-28, that "there is an immobile reference between the laser transmitter and the line-of-sight." There is no teaching or suggestion for how this reference is obtained or ensured for accuracy.

Finally, Goda at column 2, lines 45-48, teaches that "the rigidly adjusted reference between the line-of-sights and the transmitting direction of the laser beam is absent in the present

invention in at least one dimension." This is precisely contrary to the present invention which seeks to ensure that the line of sights is exactly coincident with the transmitting direction of the laser beam. Goda, at column 4, lines 31-47, discloses a "horizontally-arranged series of laser transmitting elements 66" and a "motor adjusting device" that allows the lasers to be "swivelled continuously." This is vastly different from the claimed invention which provides a simulation laser that is fixed to be exactly co-directional with the weapon sights (line-of-sight). In fact, if anything, Goda teaches away from the concept of using a reference beam to permanently align a simulated firing beam with a weapon's sight. Of course, it is axiomatic that a reference that teaches away from the claimed invention cannot be combined with other references to reach the claimed invention.

Applicants submit respectfully that Eichweber fails to cure the deficiencies in Goda. Eichweber discloses a firing simulator that projects the images of targets into the weapon's sights via mirrors from a cathode ray tube display. At column 2, final paragraph, Eichweber teaches that "images on the cathode-ray tubes (5, 6) are produced by means of a computer." In other words, there is no targeting of actual physical targets, only computer-generated images. Thus, the direction of the weapon's sights in relation to the simulation is not assessed and is not, in fact, particularly relevant. Eichweber discloses no alignment beam, no simulated firing beam, no adjustment to maintain co-directionality of the simulated firing beam with the weapon's sights, and no visualization of an alignment or reference beam through the weapon's sights. Accordingly, Applicants submit respectfully that Eichweber cannot be held to cure the deficiencies of Goda with respect to those elements.

Applicants submit respectfully that Parikh also fails to cure the deficiencies in Goda. Parikh discloses an adjustable firing simulator that allows a laser beam to be calibrated to be co-

directional with the weapon's sights. However, this adjustment is made prior to the firing simulation and is not repeatable and cannot be assessed for continued accuracy during the simulation. The invention of Parikh represents an object that the present invention overcomes – the Parikh system provides accurate calibration of the laser firing simulator prior to war games, but if the calibration is lost during the war games the calibration cannot be reset in the field. The Parikh system does not include an alignment beam, an alignment beam that is visible to the shooter, or means to calibrate the alignment of the firing simulator with the weapon's sights in the field. At column 4, Parikh teaches a system that requires an elaborate "alignment system" that automatically calibrates the laser simulator. This alignment system is a unit separate from the firing simulator, contrary to the presently-claimed invention. Accordingly, Applicants submit respectfully that Parikh cannot be held to cure the deficiencies of Goda with respect to the elements noted above.

Applicants submit respectfully that Clarke also fails to cure the deficiencies in Goda. Clarke discloses a firing simulator in which a photo-detection device is mounted parallel to the weapon barrel and sights. The Final Office Action alleges that Clarke cures the deficiency in Goda that Goda fails to disclose an alignment mark that is visible during every simulated shot. Clarke discloses an alignment mark that is displayed on a CRT at which the weapon is aimed. This alignment mark is not generated by the alignment device or firing simulator mounted on the weapon as claimed presently. Accordingly, Applicants submit respectfully that Clarke cannot be held to cure the deficiencies of Goda.

Accordingly, Applicants submit respectfully that the rejections under 35 U.S.C. § 103(a) have been overcome, and Applicants request respectfully that the rejections under 35 U.S.C. § 103(a) be withdrawn.

AUTHORIZATION

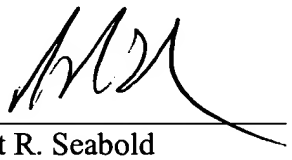
Applicants believe there is no fee due in connection with this filing other than the fee for a three-month extension of time, payment for which is authorized in the attached Petition for Extension of Time. However, to the extent required, the Commissioner is hereby authorized to charge any fees due in connection with this filing to Deposit Account 19-5127 (Order No. 19391.0027) or credit any overpayment to same.

CONCLUSION

Applicants submit respectfully that the present application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action, and an early Notice of Allowance are requested.

If the Examiner feels that an interview would facilitate the prosecution of this application, Applicants respectfully urge the Examiner to contact the undersigned directly at 202-295-8466.

In general, Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 424-7500. All correspondence should be directed to our address given below.



Robert R. Seabold
Registration No. 41,298
202-295-8466

Swidler Berlin Shereff Friedman
3000 K Street, NW, Suite 300
Washington, DC 20007
Telephone: (202) 424-7500
Facsimile: (202) 295-8478

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